

WHAT IS CLAIMED IS:

1. A semiconductor device including an MIM capacitor, the semiconductor device comprising:

a semiconductor substrate;

5 an interlevel dielectric film provided on the semiconductor substrate; and

an interconnect buried in the interlevel dielectric film and electrically connected to the semiconductor substrate,

wherein the MIM capacitor includes a first electrode of a metal, a second electrode of a metal and a capacitive insulating film of a dielectric,

10 the first electrode is buried in the interlevel dielectric film,

the capacitive insulating film is provided on the first electrode, and

the second electrode is a metal layer provided to face the first electrode with the capacitive insulating film interposed therebetween.

15 2. The semiconductor device of claim 1, wherein a pad electrode is provided and exposed on part of the interconnect, and

the pad electrode and the second electrode are made of the metal layer.

3. The semiconductor device of claim 1, wherein a pad electrode is provided and
20 exposed on part of the interconnect,

a connecting line for electrically connecting another part of the interconnect to the second electrode is provided on the second electrode, and

the pad electrode and the connecting line are made of an identical metal film.

25 4. The semiconductor device of claim 1, wherein the capacitive insulating film is a

film having a function of preventing diffusion of the metal constituting at least one of the first and second electrodes.

5 The semiconductor device of claim 1, wherein the capacitive insulating film is a film made of silicon nitride.

6. A method for fabricating a semiconductor device, the method comprising the steps of:

- a) forming an interlevel dielectric film on a semiconductor substrate;
- 10 b) forming a plurality of grooves and a plurality of via holes in the interlevel dielectric film;
- c) filling a metal in the grooves and the via holes, thereby forming a first electrode for an MIM capacitor and an interconnect electrically connected to the semiconductor substrate;
- 15 d) forming a capacitive insulating film of a dielectric on the first electrode; and
- e) providing a metal layer on the capacitive insulating film, thereby forming a second electrode for the MIM capacitor.

7. The method of claim 6, wherein in the step e), a pad electrode is also formed out
20 of the metal layer on part of the interconnect.

8. The method of claim 6, wherein the step d) is the step of forming the capacitive insulating film on surfaces of the first electrode, the interconnect and an exposed part of the interlevel dielectric film,
25 the step e) is the step of providing the metal layer on the capacitive insulating film

and then etching the metal layer, thereby forming the second electrode, and

the method further includes the steps of:

removing part of the capacitive insulating film after the step e) has been performed;

and

5 forming a connecting line for connecting the second electrode to part of the
interconnect and a pad electrode connected to another part of the interconnect.

9. The method of claim 6, wherein the capacitive insulating film is a film having a
function of preventing diffusion of the metal constituting at least one of the first and
10 second electrodes.

10. The method of claim 6, wherein the capacitive insulating film is a film made of
silicon nitride.